

Examiner: Sameh Tawfik
Art Unit: 3721
Facsimile: 703-305-3579

Docket No.: NHL-HOL-55
Serial No.: 09/942,254
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a bottle filling section configured to fill bottles rinsed by said rinsing section;

a bottle capping section configured to cap bottles filled by said filling section; and

a product stabilizing section configured and disposed to stabilize the content of capped bottles;

said product stabilizing section comprising:

a plurality of spray arrangements, each of said plurality of spray arrangements being configured and disposed to spray liquid over at least one bottle;

a plurality of tanks, said plurality of tanks being configured and disposed to supply said plurality of spray arrangements with liquid;

a plurality of tank arrangements configured and disposed to maintain predetermined temperature conditions of liquid to stabilize the content of capped bottles;

an arrangement interconnecting said plurality of spray arrangements, said plurality of tanks, and said plurality of tank arrangements among one another to adjust characteristics and flow of liquid circulating in said product stabilizing section in

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response to interruptions of movement of bottles in said product stabilizing section;

a housing;

said housing comprising a roof arrangement, an inlet for the introduction of capped bottles into said housing, and an outlet for the release of capped content-stabilized bottles from said housing;

said plurality of spray arrangements being disposed in said roof arrangement;

said housing being configured to minimize egress of liquid sprayed by said plurality of spray arrangements from said housing;

said housing being configured to maintain predetermined temperature conditions of sprays of liquid sprayed by said plurality of spray arrangements;

conveyance apparatus configured and disposed to move bottles in succession in a flow of bottles from said inlet into the interior of said housing and from the interior of said housing out of said housing through said outlet of said housing;

said plurality of spray arrangements in said roof

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arrangement being disposed above said conveyance apparatus
to permit spraying of capped bottles from above:

said plurality of spray arrangements in said roof
arrangement comprising:

a first roof portion being configured and disposed to
heat the beverage in bottles with a first, heated, spray
having a predetermined first temperature to bring the
beverage in capped bottles to a temperature below the
stabilizing temperature of the beverage;

a second roof portion being configured and disposed
to stabilize the beverage in bottles with a second, heated,
spray of liquid having a predetermined second temperature
to bring the beverage in capped bottles to a predetermined
level of stabilization; and

a third roof portion being configured and disposed to
cool the beverage in capped bottles with a third spray of
liquid having a predetermined third temperature to bring
the beverage in capped bottles to a temperature below
said first temperature;

said second roof portion being disposed adjacent to

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said first roof portion and configured to receive capped bottles from said first roof portion; and

said third roof portion being disposed adjacent to said second roof portion and configured to receive capped bottles from said second roof portion; and

said housing being configured and disposed to permit movement of capped bottles with said conveyance apparatus in succession from said inlet to said outlet in a flow of capped bottles under the successive roof portions of said roof integral with said plurality of spray arrangements to permit at least heating, stabilizing, and cooling of the content of capped bottles with sprays of liquid, which sprays cover capped bottles with sprays of liquid.

¹²
~~10.~~ The bottling plant according to claim ¹¹~~9~~, wherein:

said housing has a longitudinal axis extending from said inlet arrangement to said outlet arrangement of said housing;

said roof arrangement comprises a plurality of depressions configured and disposed to receive liquid to be sprayed over capped bottles;

each one of said depressions has a pair of walls extending in

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the direction of said longitudinal axis of said housing;

each one of said pair of walls has a length;

each one of said depressions has a width between a pair of walls;

said length of each wall is greater than said width between a pair of walls;

each one of said pair of walls comprises a pair of inclined walls and a planar bottom surface, said walls being separated farther at the top of their corresponding depression than at said planar bottom surface;

said plurality of spray arrangements comprises a plurality of spray orifices configured and disposed to spray liquid over capped bottles;

each planar bottom surface is configured to have a plurality of spray orifices disposed therein;

said housing has a first side;

said inlet arrangement is disposed in said first side;

said housing has a second side;

said outlet arrangement is disposed in said second side;

said roof arrangement comprises a first inlet for liquid;

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said first inlet for liquid is disposed at said first side of said housing;

said first inlet is configured to permit entry of liquid in a flow of liquid in the direction from said first side to said second side of said housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said first inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over capped bottles;

said roof arrangement comprises a second inlet for liquid;

said second inlet for liquid is disposed at said second side of said housing;

said second inlet is configured to permit entry of liquid in a flow of liquid in the direction from said second side to said first side of said housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said second inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over capped bottles.

¹³
~~11~~ The bottling plant according to claim ¹²~~10~~, wherein:

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said housing comprises a frame structure;

said roof arrangement comprises a plurality of roof sections
disposed in said frame structure;

said roof arrangement comprises a plurality of cover
arrangements disposed above said plurality of roof sections;

said plurality of cover arrangements is configured to cover said
plurality of roof sections;

at least one of said plurality of cover arrangements comprises a
hinge arrangement configured and disposed to permit movement of
said at least one cover arrangement between a first position in which
said at least one cover arrangement is disposed to cover a plurality
of spray arrangements and a second position in which said at least
one cover arrangement is disposed to expose a plurality of spray
arrangements.

¹⁴
~~12~~ The bottling plant according to claim ¹¹~~9~~, wherein one of
(A.), (B.), and (C.):

(A.) said roof arrangement comprises a single cover
arrangement; and

said cover arrangement is disposed above said plurality of spray
arrangements and configured to cover substantially all of said

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plurality of spray arrangements;

(B.) said roof arrangement has a length and a width;

said length is greater than said width; and

said roof arrangement comprises a flat surface extending substantially over said length and said width; and

(C.) said roof arrangement comprises a first, lower roof portion and a second, upper, roof portion disposed above said first, lower, roof portion;

a seal is disposed between said first, lower, roof portion and said second, upper, roof portion to seal said first and second roof portions;

said first, lower, roof portion comprises a flat portion;

said flat portion is configured to extend over a substantial portion of said roof arrangement;

a plurality of spray orifices is disposed in said flat portion;

said plurality of spray orifices is disposed and configured to spray liquid over sealed containers;

said second, upper, roof portion comprises a cover for said first, lower, roof portion;

said second, upper, roof portion comprises a conduit

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arrangement; and

said conduit arrangement is configured and disposed to permit the supply of liquid to said plurality of spray orifices.

¹⁵
~~13~~ In a beverage container filling plant for filling beverage containers such as bottles or containers with a beverage, said container filling plant comprising:

a product stabilizing section configured and disposed to stabilize the content in containers;

said product stabilizing section comprising:

a housing comprising a roof arrangement, an inlet arrangement configured to receive containers into said housing, and an outlet arrangement configured to discharge containers from said housing;

a plurality of spray arrangements being disposed in said roof arrangement;

said housing being configured to minimize egress of liquid sprayed by said plurality of spray arrangements from said housing; and

said housing being configured to substantially maintain predetermined temperature conditions of sprays of liquid sprayed

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by said plurality of spray arrangements; and

conveyance apparatus configured and disposed to move containers in succession in a flow of containers from said inlet arrangement into the interior of said housing and from the interior of said housing out of said housing through said outlet arrangement of said housing;

said plurality of spray arrangements in said roof arrangement being disposed above said conveyance apparatus to permit spraying of containers from above; and

said plurality of spray arrangements in said roof arrangement comprising:

a first roof portion of spray arrangements configured to receive containers from said inlet arrangement and disposed to heat the beverage in containers with a first, heated, spray of liquid having a predetermined first temperature to bring the beverage in containers to a temperature below the stabilizing temperature of the beverage in the containers;

a second roof portion of spray arrangements being configured and disposed to stabilize the beverage in

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containers with a second, heated, spray of liquid having a predetermined second temperature to bring the beverage in containers to a predetermined level of stabilization; and

a third roof portion being configured and disposed to cool the beverage in containers with a third spray of liquid having a predetermined third temperature to bring the beverage in containers to a temperature below said second temperature;

said second roof portion being disposed adjacent to said first roof portion and configured to receive containers from said first roof portion; and

said third roof portion being disposed adjacent to said second roof portion and configured to receive containers from said second roof portion and discharge containers through said outlet arrangement of said housing.

¹⁶
~~14~~. The bottling plant according to claim ¹⁵
~~13~~, wherein:

said housing has a longitudinal axis extending from said inlet arrangement to said outlet arrangement of said housing;

said roof arrangement comprises a plurality of depressions

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configured and disposed to receive liquid to be sprayed over
containers;

each one of said depressions has a pair of walls extending in
the direction of said longitudinal axis of said housing;

each one of said pair of walls has a length;

each one of said depressions has a width between a pair of
walls;

said length of each wall is greater than said width between a
pair of walls;

each one of said pair of walls comprises a pair of sloping walls
and a planar bottom surface;

said plurality of spray arrangements comprises a plurality of
spray orifices configured and disposed to spray liquid over
containers;

each planar bottom surface is configured to have a plurality of
spray orifices disposed therein;

said housing has a first side;

said inlet arrangement is disposed in said first side;

said housing has a second side;

said outlet arrangement is disposed in said second side;

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said roof arrangement comprises a first inlet for liquid;

said first inlet for liquid is disposed at said first side of said housing;

said first inlet is configured to permit entry of liquid in a flow of liquid in the direction from said first side to said second side of said housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said first inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over containers;

said roof arrangement comprises a second inlet for liquid;

said second inlet for liquid is disposed at said second side of said housing;

said second inlet is configured to permit entry of liquid in a flow of liquid in the direction from said second side to said first side of said housing; and

at least one of said plurality of depressions is configured and disposed to receive liquid from said second inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over containers.

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¹⁷
~~15~~. The bottling plant according to claim ~~14~~¹⁶, wherein:

said housing comprises a frame structure;

said roof arrangement comprises a plurality of roof sections
disposed in said frame structure;

said roof arrangement comprises a plurality of cover
arrangements disposed above said plurality of roof sections;

said plurality of cover arrangements is configured to cover said
plurality of roof sections; and

at least one of said plurality of cover arrangements comprises a
hinge arrangement configured and disposed to permit movement of
said at least one cover arrangement between a first position in which
said at least one cover arrangement is disposed to cover a plurality
of spray arrangements and a second position in which said at least
one cover arrangement is disposed to expose a plurality of spray
arrangements.

¹⁸
~~16~~. The bottling plant according to claim ~~15~~¹⁵, comprising one of
(A.), (B.), and (C.):

(A.) said roof arrangement comprises a single cover
arrangement; and

said cover arrangement is disposed above said plurality of spray

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arrangements and configured to cover substantially all of said plurality of spray arrangements;

(B.) said roof arrangement has a length and a width;
said length is greater than said width; and
said roof arrangement comprises a flat surface extending substantially over said length and said width; and

(C.) said roof arrangement comprises a first, lower roof portion and a second, upper, roof portion disposed above said first, lower, roof portion;

a seal is disposed between said first, lower, roof portion and said second, upper, roof portion to seal said first and second roof portions;

said first, lower, roof portion comprises a flat portion;
said flat portion is configured to extend over a substantial portion of said roof arrangement;

a plurality of spray orifices is disposed in said flat portion;
said plurality of spray orifices is disposed and configured to spray liquid over sealed containers;

said second, upper, roof portion comprises a cover for said first, lower, roof portion;

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said second, upper, roof portion comprises a conduit arrangement; and

said conduit arrangement is configured and disposed to permit the supply of liquid to said plurality of spray orifices.

¹⁹
~~17~~ A product stabilizing section for a beverage container filling plant for filling beverage containers such as bottles or containers with a beverage, said product stabilizing section being configured to permit at least heating and cooling of the content in containers, said product stabilizing section comprising:

a housing comprising a roof arrangement, an inlet arrangement configured to receive containers into said housing, and an outlet arrangement configured to discharge containers from said housing;

³⁻⁶
a plurality of spray arrangements being configured to be disposed in said roof arrangement;

said roof arrangement being configured to receive said plurality of spray arrangements;

said plurality of spray arrangements and said roof arrangement being configured to be disposed above the containers to permit spraying of containers from above the containers;

said plurality of spray arrangements in said roof arrangement

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comprising:

a first roof portion of spray arrangements;

said first roof portion being configured:

to receive containers from said inlet arrangement;

and

to be disposed to heat the beverage in containers with a first, heated, spray of liquid having a predetermined first temperature to bring the beverage in containers to a temperature below the pasteurization temperature of the beverage;

a second roof portion of spray arrangements;

said second roof portion being configured to stabilize the beverage in containers with a second, heated, spray of liquid having a predetermined second temperature to bring the beverage in containers to the pasteurization temperature of the beverage; and

a third roof portion of spray arrangements;

said third roof portion being configured to cool the beverage in containers with a third spray of liquid having a predetermined third temperature to bring the beverage in

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containers to a temperature below said second temperature;

said second roof portion being configured:

to be disposed adjacent to said first roof portion;

and

to receive containers from said first roof portion; and

said third roof portion being configured:

to be disposed adjacent to said second roof portion;

to receive containers from said second roof portion;

and

to discharge containers through said outlet

arrangement from said housing.

^{20,}
~~48.~~ The product stabilizing section according to claim ^{19,}
~~17.~~

wherein:

said housing has a longitudinal axis extending from said inlet arrangement to said outlet arrangement of said housing;

said roof arrangement comprises a plurality of depressions configured and disposed to receive liquid to be sprayed over containers;

each one of said depressions has a pair of walls extending in the direction of said longitudinal axis of said housing;

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each one of said depressions has a planar bottom surface;
each one of said pair of walls has a length;
each one of said depressions has a width between a pair of
walls;

said length of each wall is greater than said width between a
pair of walls;

said plurality of spray arrangements comprises a plurality of
spray orifices configured and disposed to spray liquid over
containers;

each planar bottom surface is configured to have a plurality of
spray orifices disposed therein;

said housing has a first side;

said inlet arrangement is disposed in said first side;

said housing has a second side;

said outlet arrangement is disposed in said second side;

said roof arrangement comprises a first inlet for liquid;

said first inlet for liquid is disposed at said first side of said
housing;

said first inlet is configured to permit entry of liquid in a flow
of liquid in the direction from said first side to said second side of

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said housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said first inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over containers;

said roof arrangement comprises a second inlet for liquid;

said second inlet for liquid is disposed at said second side of said housing;

said second inlet liquid is configured to permit entry of liquid in a flow of liquid in the direction from said second side to said first side of said housing; and

at least one of said plurality of depressions is configured and disposed to receive liquid from said second inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over containers.

²¹/~~40~~ The product stabilizing section according to claim ²⁰/~~40~~, wherein each one of said pair of walls comprises a pair of sloping walls.

²²/~~20~~ The product stabilizing section according to claim ²¹/~~19~~, wherein:

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said housing comprises a frame structure;

said roof arrangement comprises a plurality of roof sections
disposed in said frame structure;

said roof arrangement comprises a plurality of cover
arrangements disposed above said plurality of roof sections;

said plurality of cover arrangements is configured to cover said
plurality of roof sections; and

at least one of said plurality of cover arrangements comprises a
hinge arrangement configured and disposed to permit movement of
said at least one cover arrangement between a first position in which
said at least one cover arrangement is disposed to cover a plurality
of spray arrangements and a second position in which said at least
one cover arrangement is disposed to expose a plurality of spray
arrangements.

^{23,}
~~21.~~ The product stabilizing section according to claim ^{19,}
~~17,~~
wherein:

said roof arrangement comprises a single cover arrangement;
and

said cover arrangement is disposed above said plurality of spray
arrangements and configured to cover substantially all of said

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plurality of spray arrangements.

²⁴
~~22~~ The product stabilizing section according to claim ¹⁹
~~17~~,

wherein:

said roof arrangement has a length and a width;

said length is greater than said width; and

said roof arrangement comprises a flat surface extending
substantially over said length and said width.

²⁵
~~23~~ The product stabilizing section according to claim ¹⁹
~~17~~,

wherein:

said roof arrangement comprises a first, lower roof portion and
a second, upper, roof portion disposed above said first, lower, roof
portion; and

a seal is disposed between said first, lower, roof portion and
said second, upper, roof portion to seal said first and second roof
portions.

²⁶
~~24~~ The product stabilizing section according to claim ²⁵
~~23~~,

wherein:

said first, lower, roof portion comprises a flat portion;

said flat portion is configured to extend over a substantial
portion of said roof arrangement;

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a plurality of spray orifices is disposed in said flat portion;

said plurality of spray orifices is disposed and configured to spray liquid over sealed containers;

said second, upper, roof portion comprises a cover for said first, lower, roof portion;

said second, upper, roof portion comprises a conduit arrangement; and

said conduit arrangement is configured and disposed to permit the supply of liquid to said plurality of spray orifices.

^{27.}
~~25.~~ A method for stabilizing sealed beverage containers filled with a beverage in a container filling plant, said plant comprising:

a product stabilization section being configured to permit at least heating and cooling of the content in containers;

said product stabilization section comprising:

a housing comprising a roof arrangement, an inlet arrangement configured and disposed to receive sealed containers into said housing, and an outlet arrangement configured and disposed to discharge sealed content-stabilized containers from said housing;

a plurality of spray arrangements configured to spray liquid

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over sealed containers;

said roof arrangement being configured to receive said plurality of spray arrangements;

said plurality of spray arrangements being disposed in said roof arrangement;

said plurality of spray arrangements and said roof arrangement being disposed to be above a level at which containers move;

said plurality of spray arrangements being configured to permit spraying of sprays of liquid over sealed containers from above;

said roof arrangement comprising:

a first roof portion, with spray arrangements, being configured to spray a heated spray of liquid over sealed containers received from said inlet arrangement of said housing; and

a second roof portion, with spray arrangements, being configured to spray another spray of liquid over sealed containers;

said second roof portion being disposed adjacent to

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said first roof portion and configured to receive sealed containers passed from said first roof portion of said housing, and to discharge from said housing sealed content-stabilized containers through said outlet arrangement; and

said method comprising the steps of:

moving sealed containers through said inlet arrangement into said housing;

spraying a heated spray of liquid, from said spray arrangements in said first roof portion over sealed containers, having a predetermined temperature sufficient and for a time sufficient to bring the beverage in sealed containers to the stabilizing temperature of the beverage in sealed containers;

moving sealed containers from underneath said first roof portion to underneath said second roof portion;

spraying another liquid, from said spray arrangements in said second roof portion over sealed containers, having another predetermined temperature sufficient and for a time sufficient to bring the beverage in sealed containers to a temperature below said stabilizing temperature to thus stabilize the content of

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sealed containers; and

removing sealed content-stabilized containers from said

housing through said outlet arrangement.

~~26~~²⁸¹ The method according to claim ~~25~~²⁷, wherein:

said housing has a longitudinal axis extending from said inlet arrangement to said outlet arrangement of said housing;

said roof arrangement comprises a plurality of depressions configured and disposed to receive liquid to be sprayed over sealed containers;

each one of said depressions has a pair of walls extending in the direction of said longitudinal axis of said housing;

each one of said pair of walls has a length;

each one of said depressions has a width between a pair of walls;

said length of each wall is greater than said width between a pair of walls;

each one of said pair of walls comprises a pair of sloping walls and a planar bottom surface;

said plurality of spray arrangements comprises a plurality of spray orifices configured and disposed to spray liquid over sealed

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containers;

each planar bottom surface is configured to have a plurality of spray orifices disposed therein;

said housing has a first side;

said inlet arrangement is disposed in said first side;

said housing has a second side;

said outlet arrangement is disposed in said second side;

said roof arrangement comprises a first inlet for liquid;

said first inlet for liquid is disposed at said first side of said housing;

said first inlet is configured to permit entry of liquid in a flow of liquid in the direction from said first side to said second side of said housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said first inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over sealed containers;

said roof arrangement comprises a second inlet for liquid;

said second inlet for liquid is disposed at said second side of

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said housing;

said second inlet for liquid is configured to permit entry of liquid in a flow of liquid in the direction from said second side to said first side of said housing; and

at least one of said plurality of depressions is configured and disposed to receive liquid from said second inlet and to pass the received liquid through said spray orifices disposed in the planar bottom surface of said at least one depression over sealed containers.

²⁹
~~27~~ The bottling plant according to claim ²⁸
~~26~~, wherein:

said housing comprises a frame structure;

said roof arrangement comprises a plurality of roof sections disposed in said frame structure;

said roof arrangement comprises a plurality of cover arrangements disposed above said plurality of roof sections;

said plurality of cover arrangements is configured to cover said plurality of roof sections; and

at least one of said plurality of cover arrangements comprises a hinge arrangement configured and disposed to permit movement of said at least one cover arrangement between a first position in which

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said at least one cover arrangement is disposed to cover a plurality of spray arrangements and a second position in which said at least one cover arrangement is disposed to expose a plurality of spray arrangements.

³⁰
~~28~~. The method according to claim ²⁷
~~25~~, comprising one of (A.),
(B.), and (C.):

(A.) said roof arrangement comprises a single cover arrangement; and

said cover arrangement is disposed above said plurality of spray arrangements and configured to cover substantially all of said plurality of spray arrangements;

(B.) said roof arrangement has a length and a width;

said length is greater than said width; and

said roof arrangement comprises a flat surface extending substantially over said length and said width; and

(C.) said roof arrangement comprises a first, lower roof portion and a second, upper, roof portion disposed above said first, lower, roof portion;

a seal is disposed between said first, lower, roof portion and said second, upper, roof portion to seal said first and second roof

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portions;

said first, lower, roof portion comprises a flat portion;

said flat portion is configured to extend over a substantial
portion of said roof arrangement;

a plurality of spray orifices is disposed in said flat portion;

said plurality of spray orifices is disposed and configured to
spray liquid over sealed containers;

said second, upper, roof portion comprises a cover for said
first, lower, roof portion;

said second, upper, roof portion comprises a conduit
arrangement; and

said conduit arrangement is configured and disposed to permit
the supply of liquid to said plurality of spray orifices.

REMARKS

This Preliminary Amendment is being submitted in order to
place the present application in a better condition for examination.
Specifically, Claims 1-8 have been canceled and Claims 9-28 are
newly presented herein. Care has been taken to avoid the
introduction of new matter. All of the changes made in this